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TITLE: Spin, unit climate, and aggression: Near term, long term, and reciprocal predictors of violence among workers in military settings

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14. ABSTRACT The primary goal of the proposed effort is to conduct a prospective study evaluating potential near term and longer term predictors of various forms of aggression and closely related constructs (e.g., physical assault, verbal aggression, anger / rage, bullying, harassment, intimate partner violence) as well as physical health and mental health outcomes often associated with exposure to aggression (e.g., drug / alcohol use, burnout, suicidal ideation). The proposed effort includes both individual level variables (e.g., differences in within-person variability in emotional state, known as "spin") and group level variables (e.g., unit climate) hypothesized to impact aggression, health, and mental health. Because we anticipate many of the relations may be bi-directional (e.g., aggression influences health, which also influences aggression), the study will consist of several waves spanning roughly 14 months. During this project year (PY1), our team focused on searching the scholarly literature and incident reports to refine the potential predictors to be studied and measures thereof, compiling and refining our measures, obtaining regulatory approvals to conduct the multi-wave study slated for PY2 and PY3, and formalizing the results of our literature search as a scholarly review document.					
15. SUBJECT TERMS workplace aggression; affective spin; unit climate; substance use; stress ; intimate partner violence ; suicidality					
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1. INTRODUCTION:

The prediction of aggressive behaviors is an historically difficult task. However, it is also a very important task, particularly in settings such as the military workplace. In addition to the harm that can be caused to targets of physical aggression, witnessing aggression in the workplace can have negative consequences for unit performance, physical health, and mental health. An oft overlooked aspect of aggression is that it is a product of factors occurring both in short (e.g., provocations) and long time frames (e.g., repeated exposure to stressful settings) as well as the individual (e.g., personality) and group level (e.g., unit climate). The primary goal of the proposed effort is to conduct a prospective study evaluating potential near term and longer term predictors of various forms of aggression and closely related constructs (e.g., physical assault, verbal aggression, anger / rage, bullying, harassment, intimate partner violence) as well as physical health and mental health outcomes often associated with exposure to aggression (e.g., drug / alcohol use, burnout, suicidal ideation). The proposed effort includes both individual level variables (e.g., differences in within-person variability in emotional state, known as “spin”) and group level variables (e.g., unit climate) hypothesized to impact aggression, health, and mental health. Because we hypothesize many of these relationships are reciprocal (e.g., health is influenced by and influences aggression), the study consists of following the same individuals across several waves spread over approximately 14 months. The project timeline specified Project Year 1 would consist primarily of reviewing the scholarly literature relating to aggression as well as investigation reports from mass casualty events, refining and finalizing measures, and obtaining relevant approvals to conduct the study. These efforts would then form the basis for data collection scheduled to occur during Project Years 2 and 3 and analyses to be conducted Year 3.

2. KEYWORDS:

workplace aggression; affective spin; unit climate; substance use; stress ; intimate partner violence ; suicidality

3. ACCOMPLISHMENTS

What were the major goals of the project?

The proposed effort consists of a qualitative examination of past incidents of aggression (via investigation reports) plus a prospective study to evaluate variables likely to predict near and long term risk of several forms of aggression and closely related concepts (e.g., physical assault, verbal aggression, anger / rage, bullying, harassment, intimate partner violence) and related physical health and mental health concerns (e.g., drug / alcohol use, burnout, suicidal ideation). We proposed to do so by looking at both individual level and unit level factors across time. At the individual level, we will examine within-person variability in emotion and interpersonal behaviors (known as “spin”), history of aggression, and mental health states related to aggression (e.g., borderline personality disorder, stress). At the unit level, we will examine unit climate regarding the appropriateness of aggressive behavior and of emotion displays as well as leadership variables relating to unit climate. As such, the effort integrates findings and theories across several separate literatures (e.g., emotion regulation, aggression in the workplace, domestic violence, substance use, etc.). We expect the variables we identify will interact with each other over time to influence aggression, health, and mental health

outcomes, and that some of these relationships will be reciprocal in nature (e.g., aggression impacts mental health, which then impacts aggression). To assess these possibilities, we use a mixture of experience sampling methods (ESM; repeated measures taken within a relatively short time) via smart phone based questionnaire delivery tools and traditional longitudinal methods (i.e., lengthier surveys at three to four month intervals) via web based delivery tools.

Our approach is largely informed by the I³ model's (Finkel et al., 2012) separation of predictors of aggression into Impellers (factors that influence base rate of aggressive urges), Instigators (akin to provocations), and Inhibitors (in this case, individual differences in ability to control one's hostile emotions and behavior). We think of potential predictors – including potentially reciprocal predictors – in terms of how they might influence one's base rate of having aggressive urges absent provocation, seeing an event as a provocation, and ability to restrain oneself from acting on an aggressive urge if such an urge is experienced.

Objectives/Hypotheses

1. To examine the relationship of within-person variability (“spin”) to aggressive behavior and health outcomes.
2. To examine potential reciprocal relationships of mental health variables (e.g., stress, substance use) to aggression over time.
3. To examine the relationship of “unit climate” to aggressive behaviors and health outcomes.
4. To examine the relationship between individual regulatory skills and aggression.

Specific Aims

1. To determine the utility of measures of affective and interpersonal spin, hostility and regulatory climate, and individual differences in self-regulation as predictors of aggressive behavior and health outcomes.
2. To describe the near and long term interactions between these factors, and their influence on aggression and health outcomes.

Year 1 Major Activities & Milestones

1. Search literature and investigation reports to inform selection of variables and measures (Sep 2014 - Feb 2015)
2. Compile measures into questionnaire (Sep 2014-Feb 2015)
3. Obtain regulatory approvals, including modifications (Feb 2015- Aug 2015)
4. Formalize results of literature search as scholarly review document (Apr 2015 - Aug 2015)

Year 2 Major Activities & Milestones

1. Recruitment and enrollment of participants (Oct 2015)
2. Data collection waves 1 (ESM wave; Nov 2015), 2 (survey; Dec 2015), and 3 (ESM plus survey; Apr 2016)
3. Data entry and preparation (Nov 2015 – July 2015)

Year 3 Major Activities & Milestones

1. Data collection waves 4 (survey; Aug 2016) and 5 (survey; Dec 2016)
2. Data entry and preparation (Aug 2016 – Jan 2017)
3. Primary data analysis (Jan 2017 – July 2017)
4. Final report (Aug 2017)

What was accomplished under these goals?

Three of the major activities slated for Year 1 focused on preparing to launch the data collections scheduled to begin Year 2 and continue into Year 3. The first group of these activities was aimed at refining the variables to include in the data collection years of the project and determining how best to measure those variables. These activities began with a literature search conducted to provide a basis for (1) an extensive evaluation of the support for and against each of the variables listed in the proposal as useful predictors of workplace aggression and health outcomes, (2) identifying additional variables of potential value not listed in the original proposal, and (3) as a basis for evaluating pros and cons of different ways of measuring these variables. The search was conducted using PsychInfo, ProQuest, and similar search tools. We also searched DoD reports of mass casualty incidents as a method of assessing evidence for and against the relevance of variables in the scholarly literature to predicting aggression in military specific workplace settings. These activities resulted in the evaluation of several hundred empirical articles, technical reports, scholarly reviews, and investigation reports for their bearing on the variables to include and how best to measure those variables. This enabled us to select our measures and submit our questionnaires to the necessary bodies for human subjects research approval during Q3 of this year.

The second group of these activities involved regulatory issues involved in conducting the study. Because the research team is spread across multiple academic institutions, to streamline this process we secured agreements from each institution to use the IRB at the PI's home institution as the IRB of record. Originally, obtaining approvals at potential recruitment sites also fell under this group of activities. However, given the fully web-based nature of the data collection, we were advised to recruit electronically using a combination of processes for which local site approval is not required. We have elected to follow this advice, and are preparing a modification for submission to our IRB and HRPO prior to final HRPO review.

The final major activity slated for Year 1 was to convert the literature search and incident search into a scholarly review document. The estimated completion date for this activity was early Year 2 (August). We estimate this document at approximately 75% complete as of the end of the period covered in this report

What opportunities for training and professional development has the project provided?

Weekly meetings have been conducted with research assistants. In addition to using these for discussing findings and theories as they pertain to the project and coordinating research assistants' activities and assignments, the meetings have also been used to help research assistants develop a deeper understanding of the literatures on military psychology, social psychology, organizational psychology, affect, mental health, and aggression. More recently, these meetings have turned to helping research assistants develop a deeper understanding of the opportunities and hazards involved in various forms of online data collection. Improving research assistants' understanding in these domains allows them to be more effective research assistants in addition to contributing to their professional development. Although we do not yet have data to present, a portion of Year 1 travel funds was also used to subsidize one research assistant's participation in the annual meeting of the Society of Personality and Social Psychology to provide him with an opportunity to gain broader exposure to health and aggression research, to learn about not yet published research in health and aggression, and to learn more about scholarly norms.

How were the results disseminated to communities of interest?

Nothing to report

What do you plan to do during the next reporting period to accomplish the goals?

During the first portion of the Project Year 2, we intend to submit a request for modification to our IRB and to HRPO to obtain permission to recruit electronically per the advice of our assigned recruitment liaison. While approval is pending, we intend to continue formalizing the results of our search of the literature and of investigation reports into a scholarly review on the topic of aggression in the military workplace.

Upon receipt of IRB and HRPO approval, we intend to open the enrollment site and distribute our recruitment links / advertisements / announcements. While enrollment is accruing, members of our team will make final preparations to release the wave 1 questionnaire to participants. During wave 1, some members of our team will be devoted to assisting participants with technical issues should any arise while other members make final preparations to launch wave 2. Upon completion of wave 2, some members of our team will be devoted to data entry and preparation while others focus on making final preparations to launch wave 3. Similar divisions of labor will continue through waves 4 and 5, gradually shifting from data entry and preparation to data analysis and writing.

4. IMPACT**What was the impact on the development of the principal discipline(s) of the project?**

The scholarly review slated for completion early Year 2 integrates theory and findings on aggression from organizational psychology, social psychology, and military psychology and applies them in a novel way to predict aggression. It also integrates across long and short term predictors of aggression. This level of integration is rare in these literatures. As such, the review document has the potential to lead researchers in these areas to consider a broader range of factors when thinking about prediction and prevention of aggression.

What was the impact on other disciplines?

Nothing to report

What was the impact on technology transfer?

Nothing to report

What was the impact on society beyond science and technology?

In addition to integrating theory and findings on aggression from across different areas of research, the scholarly review slated for completion early Year 2 integrates across long and short term predictors of aggression and potential reciprocal effects. A better understanding of these temporal relations will help in both the development of methods for predicting when someone is about to aggress and in the development of policies to reduce the likelihood of aggression in military and workplace settings.

5. CHANGES/PROBLEMS:

Changes in approach and reasons for change

In light of the online nature of the data collection, our recruitment liaison suggested we consider recruitment via online methods (e.g., advertising targeting unit facebook pages) rather than on-base recruitment. Because this would streamline enrollment for potential participants and thus facilitate accrual, we are in the process of implementing this change. We anticipate the cost of such recruitment (e.g., fees for facebook advertising) can be covered by funds originally allocated to traveling to recruitment sites.

As noted in our quarterly reports, to address feedback received at the 2014 IPR, we have expanded our measures to incorporate additional leadership variables and measures currently in use by DEOMI. The former creates a potentially richer explanatory model and the latter facilitates interpreting our findings within the broader context of existing Department of Defense research on workplace aggression, leadership, unit climate, etc. In light of other feedback from the IPR, we have elected to move the experience sampling portions of the study to a delivery platform tailored to smart phone based surveys.

Actual or anticipated problems or delays and actions or plans to resolve them

As stated in our quarterly reports, receipt of the award occurred too late to engage research assistants for Fall of 2014. In addition, one of our key personnel accepted a new position. To minimize the impact of the understaffing in Fall 2014 on task completion we hired an additional research assistant for 2015. To resolve issues surrounding the change in affiliation of one of our key personnel we obtained approval to keep him involved via subaward to his new institution and slightly shifted the distribution of responsibilities among key personnel.

To minimize IRB/HRPO difficulties that often occur when coordinating across multiple academic institutions, we arranged for each institution to treat the IRB at the PI's institution (UTSA) as the IRB of record for this effort.

Changes that had a significant impact on expenditures

Delays in hiring resulting from the timing of notification of award reduced anticipated spending during CY 2014. However, the additional research assistant hired to minimize the impact of the hiring delays on task completion has also brought us into better alignment with original projections for Project Year 1 spending.

The change of affiliation of one of our key personnel also impacted CY 2014 spending. Approval was obtained to convert him to a subaward and the subaward has been executed. However, the first payment had not been made as of the end of the reporting period, reducing our Project Year 1 spending considerably. We anticipate this payment will be made shortly.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Significant changes in use or care of human subjects

The project was approved by the IRB at the PI's home institution (Feb 2015) and received a favorable initial review by HRPO (June 2015). These reviews included the smart phone based delivery of the ESM portions of the effort. However, the submission assumed on base

recruiting rather than the online recruitment methods we have since elected to adopt. We are in the process of finalizing and submitting our online recruitment materials for review as a modification, and expect to begin enrolling participants shortly after approval.

Significant changes in use or care of vertebrate animals.

N/A ; Effort does not involve any non-human subjects or specimens

Significant changes in use of biohazards and/or select agents

N/A ; Effort does not involve any biohazards or related substances

6. PRODUCTS

- **Publications, conference papers, and presentations**

Journal publications.

Nothing to report

Books or other non-periodical, one-time publications.

Nothing to report

Other publications, conference papers, and presentations.

Nothing to report

- **Website(s) or other Internet site(s)**

Nothing to report

- **Technologies or techniques**

Nothing to report

- **Inventions, patent applications, and/or licenses**

Nothing to report

- **Other Products**

Nothing to report

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Name: Michael R. Baumann

Project Role: PI

ORCID: 0000-0001-9633-0677

Nearest person months

worked this year: 2 (1.5 via project funding; 0.5 via UTSA research time)

Contribution to project: Dr. Baumann oversaw the overall effort, coordinated the efforts of senior personnel, coordinated with IRBs, oversaw research assistants, and oversaw the literature review and questionnaire development activities.

Name: Rebecca Weston

Project Role: Co-PI
ORCID: 0000-0003-0457-1970
Nearest person months worked this year: 1
Contribution to project: Dr. Weston's primary contributions this year were in the form of advising the literature review and questionnaire development with a particular eye toward suitability of the measures for the analytic techniques we hope to use once data are collected.

Name: Daniel J Beal
Project Role: Co-PI
ORCID: 0000-0003-4750-2430
Nearest person months worked this year: 1
Contribution to project: Dr. Beal's primary contributions this year were in the form of advising the literature review and questionnaire development with an eye toward work environment / climate, spin, and suitability of measures for the analytic techniques we hope to use once data are collected.

Name: David Oviatt
Project Role: Research Assistant
ORCID: 0000-0002-3343-2411
Nearest person months worked this year: 4
Contribution to project: Mr. Oviatt's primary responsibilities were (1) searching the literature for additional aspects and measures of leadership of potential interest to the project and (2) seeking out reports of major incidents of aggression and conducting the initial examination of available documents on those incidents as a retrospective study of aggression in military work settings.

Name: Janet Bennett
Project Role: Research Assistant
ORCID: 0000-0002-7542-3265
Nearest person months worked this year: 4
Contribution to project: Ms. Bennett's primary responsibilities were (1) searching the literature for theoretical models and perspectives on aggression by which to organize our review of the literature, (2) searching the literature for additional measures and concepts of potential interest to the effort, and (3) assisting in the writing of the formal review.

Name: James Deller
Project Role: Research Assistant
ORCID: 0000-0001-7374-7621
Nearest person months

worked this year: 2

Contribution to project: Mr. Deller's primary responsibilities were (1) searching the literature for additional predictors of aggression in civilian workplaces, (2) searching the literature for updated findings regarding affect, emotion regulation, and the measurement of these constructs, and (3) searching the literature for additional measures and concepts of potential interest to the effort.

Name: Maria Henri

Project Role: Research Assistant

ORCID: 0000-0003-2418-4046

Nearest person months worked this year: 2

Contribution to project: Ms. Henri's primary responsibilities were (1) searching the literature for known and suspected differences between civilian and military workplaces and workforces relevant to the prediction of aggression in these settings and (2) researching ways to measure and assess both spin and other conceptualizations of within-person variance and stability (e.g., flux).

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Michael R. Baumann:

No change

Rebecca Weston:

New support obtained since last annual report:

CDC

Implementing Fourth R in US schools: feasibility, fidelity, and sustainability

Sep 2015 – Sep 2018

Role: Co-I

Commitment: 1 month per year (9 academic months at 11%)

Support completed since last annual report

NIAAA, 1R01AA018686-01A1

Racial and ethnic disparities in partner violence, PTSD and alcohol outcomes.

Role: Co-I

Commitment: 1 month per year (12 calendar months at 8.3%)

Daniel Beal:

New support obtained since last annual report:

None

Support completed since last annual report

NIH R01, National Institute of General Medical Sciences

Mentoring Functions in Scientist Development

Role: Co-I

Commitment: 1 month per year (3 summer months at 33%)

Craig Bryan:

New support obtained since last annual report:

Military Operational Medicine Research Program

Technologies for assessing behavioral and cognitive markers of suicide risk

Oct 2015 – Sep 2018

Role: PI

Commitment: 1.2 months per year (10% each calendar month)

Northrop Grumman

Time-dependent analyses of suicide risk indicators among military social media users

Jun 2015 – Sep 2105

Role: PI

Commitment: .4 months (10% each calendar month)

Support completed since last annual report

Air Force Medical Support Agency (AFMSA) #I-11-24

Risk and Protective Factors for PTSD and Social-Occupational Impairment Among Special Operations Forces (SOF) Personnel

Role: Co – PI

Commitment: 1.2 months per year (10% per calendar month)

What other organizations were involved as partners?

Nothing to report (all organizations involved were previously specified)

8. SPECIAL REPORTING REQUIREMENTS

QUAD CHARTS:

Submitted as Appendix A

9. APPENDICES:

Appendix A: Quad chart